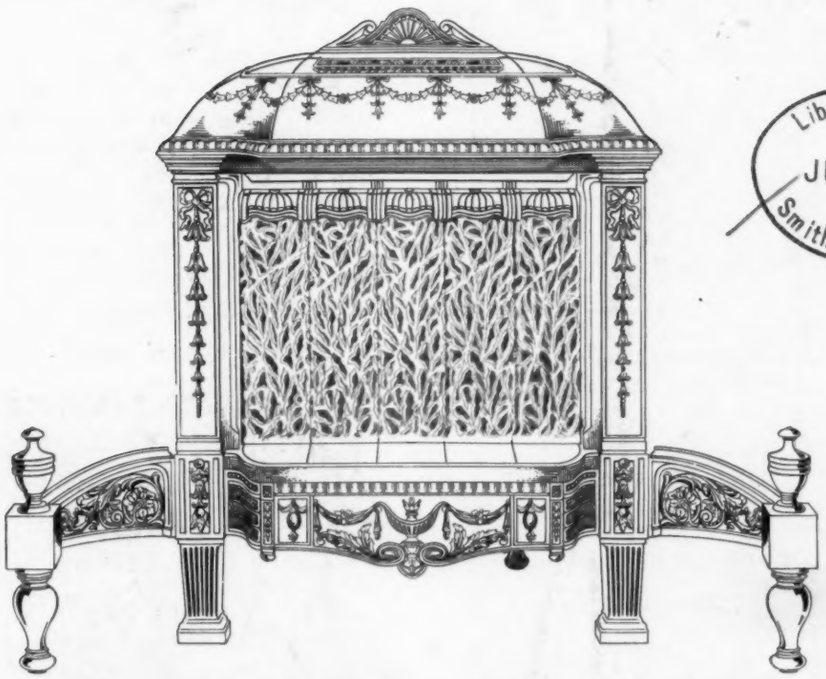
American
GAS JOURNAL
Formerly American Gas Light Journal
EST. 1859

VOL. 119. No. 3.
WHOLE NO. 3415.

NEW YORK, SATURDAY, JULY 21, 1923

Subscription $3 per year
$4 Canada. $5 Foreign

Library of Congress
JUL 23 1923
Smithsonian Deposit



Look Out For This Heater
at the Atlantic City Convention

This heater "De Luxe" will be shown with the rest of our line at Booths 18-19 on the Steel Pier.

Make your plans now to spend the week of October 16th in Atlantic City. It will be well worth while. Among other exhibits, that of the Radiant Heat Corporation will be of intense interest to all gas men attending.

Our complete line, the "A", "B" and "C" Series will be shown at that time.

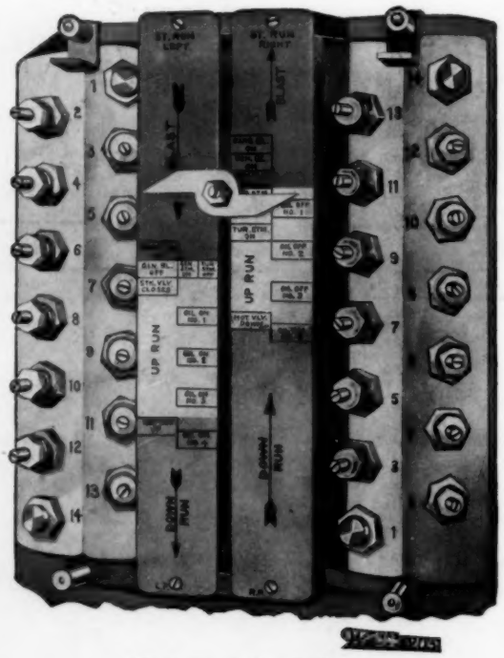
Radiant Heat Corporation of America

126 Eleventh Avenue **New York City**

Kennedy Heaters have been tested by the Electrical Testing Laboratories of New York.

Index to Contents, Page 4

Advertising Index, Page 33



Close-up of the Indicator
(The Cover plates over Timing Screws were removed for this picture.)

Utmost Flexibility

of Operation

of

Water Gas Sets

Includes

Straight runs, Purged runs, Purged runs with Blow-runs, or Blow-runs without purging; and, with any one of these:—

Any combination of blast time, down-run time and up-run time,

Changes as small as **FIVE SECONDS** in any part of the cycle,

Admission of oil at the best time.

Quick changes to timing device,

INSTANT change to hand control;

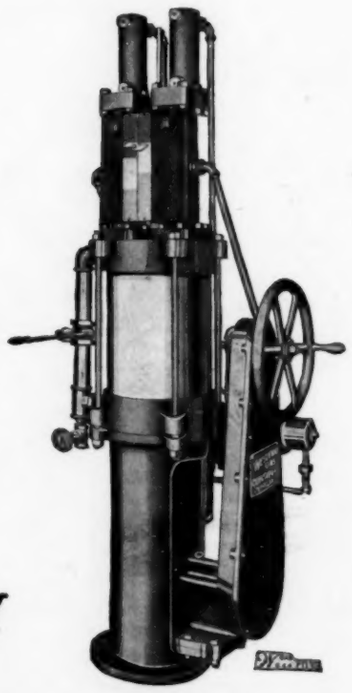
THIS IS THE SERVICE GIVEN BY THIS CONTROL

THE WESTERN
Automatic Control for Water Gas Sets and Blue Gas Sets

Demonstrated before hundreds at Atlantic City.

It will prove every claim by a demonstration on **"your set."**

Inquiries solicited.
Bulletin J-210-E



This control will pay its own way by increasing the gas making capacity, by reducing the lbs. generator fuel per M, and by reducing the clinkering time.

The WESTERN GAS CONSTRUCTION COMPANY

FORT WAYNE, IND.

GLOVER-WEST *Vertical Retorts*

Special Features

HEATING

The method of heating the retorts is one of the main features of the Glover-West system; inasmuch as the combustion chambers extend, not in the direction of the length of the retorts, but transversely to them in definitely controllable zones, the temperature can be increased at any particular point in the length of the retort WITHOUT AFFECTING the temperature at any other point.

On the other hand, with combustion chambers extending along the retort, downward or upward, it is impossible to obtain a high AVERAGE temperature of the retort without a MAXIMUM temperature which must be considerably greater than in the Glover-West system, in which the average temperature inside the retort can be maintained at a high level without exposing the refractory materials to a maximum approaching their critical temperature.

This point will be the more appreciated when it is remembered that, working at a temperature of 2500° F. a difference of 100° F. will have a definite effect on the life of the refractory materials. Only by this method of heating, too, can it be claimed that the gas in its passage through the retort need never pass through a zone hotter than that in which it was evolved.

Another feature of the Glover-West system of heating is that the fuel gas, secondary air and products of combustion travel always forward and upward from the points of combustion; they never travel in a downward direction, so that the setting can be worked with a minimum pull; only just sufficient, in fact, to remove the waste gases. The result is a long flame and slow travel of the gases in the combustion chambers, and a long working life for the retorts and brickwork exposed to the maximum temperatures.

GLOVER-WEST

COKE EXTRACTOR

After setting is started the heats are regulated by means of the chimney dampers alone. It is not necessary to adjust the dampers of the individual combustion chambers when the distribution of the heats throughout the length of the retorts requires to be altered. One of the essential features of the Glover-West system of heating is the facility with which the temperatures can be varied at short notice to suit varying classes of coal and varying volumes and qualities of gas.

WEST GAS IMPROVEMENT CO.
of America, Inc.
150 Nassau St. New York

American Gas Journal

SIXTY-THIRD YEAR

Published Weekly by American Gas Light Journal, Inc., 53 Park Place, New York, N. Y.

ELBERT P. CALLENDER, Pres. S. G. KRAKE, Vice-Pres.-Treas. A. M. GLEASON, Sec'y.

STANTON G. KRAKE, Managing Editor

CHAS. S. MYERS, Field Representative

Contents of This Issue

Gas Sales and Trade Conditions—By L. W. Allwyn Schmidt..... 45

Non-Fingery Coke from High Volatile Coals—By Kotaro Shimomura..... 47

Service and Good-Will Advertising—By R. F. McGuinness..... 49

Gas Meter Capacity—By W. A. Castor..... 51

House Heating By Gas—By A. T. Fay..... 53

Industrial Engineering—By Ralph C. Smith..... 54

As the Journal Views It..... 55

Gas Progress and Appliances

What Are the Benefits of Customer Ownership of Public Utilities—By Esther E. Dennison..... 56

A Real Public Servant 59

News of the Gas Industry 61

Subscription $3.00 per year, including postage, in the United States, Mexico, Cuba, Porto Rico, Hawaii or the Philippines; in Canada, $4.00; foreign, $5.00—Single Copies, 10 cents.

AMERICAN GAS JOURNAL, July 21, 1923. Vol. 119, No. 3.
Published weekly by American Gas Light Journal, Inc., New York, N. Y.
Entered as second-class matter Jan. 9, 1917, at the post-office at New York. N. Y., under the Act of March 3, 1879.

AMERICAN
GAS JOURNAL

Vol. 119. No. 3 NEW YORK, JULY 21, 1923 Whole No. 3415

Gas Sales and Trade Conditions

FACTORS INFLUENCING INDUSTRIAL GAS SALES. NEW BUSINESS AND INDUSTRIAL CONDITIONS

L. W. Allwyn-Schmidt

General business conditions are important in affecting industrial gas sales. The gas industry, in acquiring industrial business, becomes subject to the conditions that exist in the general business of the country to a far larger degree than when its load was entirely of domestic nature. Gas sales for industrial purposes will depend to a certain extent on the business conditions in the industry being served. When business is bad increased gas sales to old customers cannot be expected, but there are always new fields waiting to be developed.

The position of an industry is never stronger than that of its customer industries. If the industries using gas in their industrial processes suffer from economic depression, it only stands to reason that this part of the business of the gas industry must suffer similarily. The gas manufacturer and distributor, therefore, who have a large proportion of industrial customers in their field will do well to keep a close eye upon industrial market conditions because his own production and selling policies must depend on what happens to these markets.

Happily this work of keeping track of conditions in the industrial markets is not a difficult one. The highly developed and organized state of all industrial production at the present time makes it impossible for hardly any special field of production to cut itself away from the other fields, with the result that it is not necessary to watch each industrial field but to keep one's attention focussed upon large economic factors which govern industrial business as a whole. By watching these general fundamental factors, and by being able to draw a correct conclusion from the variations that occur to them it will be possible to judge correctly the effect of the general situation on individual industries and the business of the gas industry in particular.

There are, of course, gas companies who have a predominence of customers of one kind only in their industrial business. This is the case in the concentration of the textile industry in some of the cities of New England. But even such concentration of industry is not without the coexistence of supplementary industries which are also gas consumers. They help to stabilize the gas load to a greater or less degree.

Facts Influencing Industrial Gas Consumption

Let the sales manager take into consideration the following very important facts which influence his industrial load. The quantity of gas sales to the industrial consumer depends upon the business conditions in the industries served by the gas plant. Before business can be good the industries themselves must be able to find a market for their products. So it is necessary that industrial activity be preceded by ability of the nation to consume goods. The national purchasing power must be high and general business must be good. Furthermore the industries themselves must be healthy, which means that their manufacturing cost must be sufficiently low to yield profits and the margin of profit must be sufficient to insure financial strength.

It is only by recognizing and studying all these factors that it will be possible for the gas company to arrive at an approximate estimate of the possible industrial business.

It is by no means impossible to obtain this knowledge. Its application, however, may require a mind able to read figures and to give to each fact its right importance as far as the business of the gas industry is concerned. The chart accompanying this article shows the development of the national industrial markets during the last nine years. It shows in its first half the averages for each preceding year since 1914 and the progress is recorded for each month during the present year. From it may be deducted certain very striking facts of great importance to every gas distributor, interested in selling to industrial consumers.

Industrial Gas Consumption Increases.

Industrial gas consumption has been increased greatly during the last years. Advertising gas to industrial consumers has interested them in the possibilities of using gas for all kinds of manufacturing processes. Some gas plants have had a larger share of this kind of customers than others. But on the average no plant can have more than what is com-

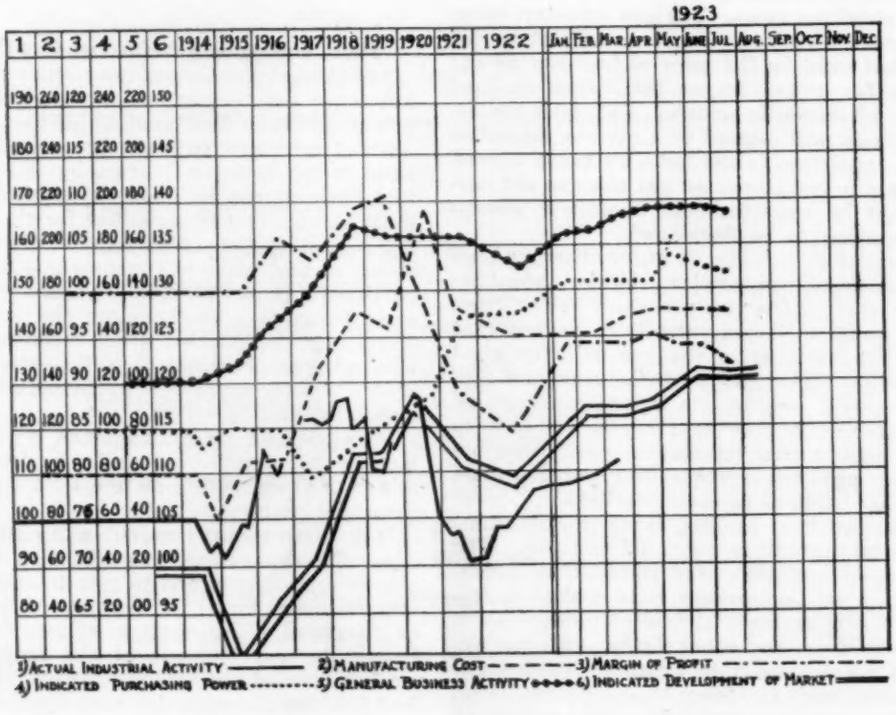
mensurate with the actual consumptive capacity of the market. No plant can have more business from its district than the district can give. The gas manager, keen to know whether he has a reasonable share of the business, will do well to consider the following: How large was his industrial business in 1914 and how large is it today? What has been the actual increase of industrial activity in the district and how far has he himself been able to follow this increase with gas sales to industrial consumers?

Peoples are easily inclined to take a wrong view of the possibilities of industrial expansion. True, one city may expand more rapidly than the other and individual manufacturers will claim that they run ahead of last years figures at the rate of fifty per cent or more. But it is not the individual customer who provides the business for the gas industry but all the consumers in the aggregate. Now a glance at the chart will show that the actual industrial activity of the nation is today only 10 per cent above 1914 measured upon the number of men employed in the industry of the countries. Improvement in manufacturing methods, of course, has helped to increase the output of individual plants, but even so it is certain that the actual increase in industrial production is not much more than 15 per cent. This would mean that the gas manager, commanding today an increase in industrial sales of between 10 and 20 per cent on old business only, has possibly all that he could expect reasonably.

What is in Store for the Gas Industry?

It is of greater importance for him to know, however, how the business may develop during the next six months or so.

The chart, referred to above, indicates the conditions in a mixed industrial market existing in almost any city having a gas plant at its disposal. In column 5 a heavy line starts indicating general business activity. This line shows the working of the industrial and general markets as a whole. It is composed of all such factors as transportation, production and consumption of essential raw materials, money transactions, etc. It shows in a cumulative form the whole business of the nation in retail, wholesale and manufacturing enterprises. This line has moved upward steadily during the last months, in fact since the middle of last year, and it indicates that much business is being transacted all over the country. These business transactions appear to be of even greater importance than the heavy industrial transactions during the war, because there is more retail business being done and money is circulating more freely. It seems to show that the industries of the country are facing a market with a large consumptive capacity. This impression is strengthened by a further study of the dotted line, starting with column 4, showing the indicated purchasing power of the market. When there is in existence a well developed business activity, it requires


1923
1 2 3 4 5 6 1914 1915 1916 1917 1918 1919 1920 1921 1922 Jan. Feb. Mar. Apr. May June Jul. Aug. Sep. Oct. Nov. Dec.
1) Actual Industrial Activity
2) Manufacturing Cost
3) Margin of Profit
4) Indicated Purchasing Power
5) General Business Activity
6) Indicated Development of Market

a similar strength in national purchasing power to make business prosperous for any length of time. It appears just now that the purchasing power is higher than at any time in the history of the country and that it is distributed more evenly throughout all classes of the population. This makes for good business almost all over the country. There are to be sure indications of a small decline which, however, can hardly influence business as a whole. So the industrial market seems well secured. There is consequently every reason to expect larger sales of gas to industrial consumers, wherever the consumption of gas is already an established fact.

Chances for New Business

In selling gas, however, the possibility of getting new business must not be overlooked. Three main factors enter into the acquisition of new industrial accounts. Greater efficiency, greater convenience, a possible saving in cost. The first two may often outweigh the last factor. Greater efficiency may in fact often recompense the manufacturers fully for the higher cost of any fuel or manufacturing process.

The problem of adjusting manufacturing cost is never absent in the mind of any manufacturer.

There was a time immediately following the war when manufacturing cost was very high. Now the cost factor has receded somewhat but indications point to a new climb, caused principally by higher wages and the cost of fuel. The gas industry might take hold of this opportunity and show the manufacturer, how he can obtain greater manufacturing efficiency by the use of gas and by so doing reduce his manufacturing cost. This also might help him to increase his margin of profit which is somewhat below the standards of pre-war days.

Not all of these considerations may influence the business policies of the gas sales manager, but it is absolutely necessary for him to have a general knowledge of the conditions in his market, because only in this way can he direct his sales force to the best advantage. Even a generally hostile market can often be used to good advantage, if the campaign is carried out on sound lines according to the particular market situation.

The general question: Will industrial gas sales be larger and is the period suitable for a campaign is easily answered by referring to the double line upon our chart starting in column 6. This line shows the indicated development of the market. It has been climbing rapidly during the last nine months but it has now reached the peak and indications are that during the rest of the summer, conditions will be favorable without, however, offering any particular hope for a further rise. We are in a period of settling down and manufacturing industries will adjust themselves during the next few months. This is the time to suggest improvements and should afford an opportunity for the gas industry.

The industrial business of the gas industry is growing and will no doubt continue to grow. But its growth will not be merely a natural development. It will depend largely upon the work done by enterprising gas men. This work can only be effective if the gas industry works in close co-operation with the industries that it serves. A study of the conditions in these customer industries will aid the gas salesman in approaching the customer at the right time and with the right argument. This in the science of selling means 100 per cent sales efficiency.

Non-Fingery Coke from High Volatile Coals

DETAILS OF OPERATING METHOD. PRIN CIPLES OF APPARATUS DESIGN. RESULTS OBTAINED

Kotaro Shimomura

This article, which is reprinted from the Journal of the Society of Chemical Industry, June 8, 1923, is concerned with a method of making non-fingery coke from bituminous coals that are high in volatiles. This is an important subject, for the supply of gas coal, which is also used for the manufacture of metallurgical coke is by no means inexhaustible even in this country.

Practically all the coals in Japan are high in volatile matter, ranging from 38 to 40 per cent., and when heated in coke ovens give what the Americans call "fingery" coke. The usual method to remedy the ill effect is to mix with anthracitic coals in order to lessen the percentage of volatile matter. It has been found that by-product coke-ovens have a tendency to increase the density at the expense of augmenting the fingery condition, an effect rendered more conspicuous after stamping. For such coals, beehive ovens give better results, owing, it is supposed, partly to slower heating and partly to the tar running down and filling up the incipient cleavages. Experience showed that with such coals the by-product ovens gave a product no better than gas coke.

Metallurgical Coke From Bituminous Coals

In 1908 the writer was granted a patent (Jap. pat. 13,583) for his method of making metallurgical coke with bituminous coals, which being translated into English runs thus:—

Our coals having mostly a high percentage of volatile matter, the coke produced from them contains the lines of cleavage so closely situated that it easily shatters to pieces, which renders it worthless for metallurgical purposes. Generally speaking, in order to produce good coke out of such coals it is a common practice to mix them with coals of low percent-

age of volatile matter, especially with coals of an anthracite nature. But the resources of such coals in our country are so limited that dependence on the anthracites makes the manufacture of coke a very precarious business.

The object of my invention is to make the coke manufacturer independent of anthracites or coals of low volatile matter, in the production of non-fingery coke. The method of attaining this object I will explain hereunder.

Description of Method

A coal of high volatile matter is charged into a suitable retort or oven, and distilled till it parts with a certain portion of volatile matter, when it is quenched. To accomplish this beehive ovens are unsuitable; a special apparatus heated with gas from the outside gives the best results. The proper degree of heating depends upon the nature of the coals used; but generally the temperature most suitable lies between 300 degrees and 600 degrees C. The object in view is to leave in the coal an amount of volatile matter ranging from 15 to 25 per cent., depending on the nature of coal. The amount of volatile matter to be left is to be decided by actual experiments with the particular coals employed.

The product thus obtained is quenched in water, and if necessary, ground and washed free from foreign matter. It is then mixed with the bituminous coals in the proportion of 20 to 35 per cent of the former, and 80 to 65 per cent of the latter. With good caking coals it is possible to mix the product to the amount of 35 per cent. The mixture is then charged into coke ovens and heated at the usual temperature, ranging from 1,000 degrees C. to 1,400 degrees C. If it is desired to obtain coke of high density, it is recommended to heat it at a temperature as high as the bricks of the oven permit; when it is desired to obtain coke of comparatively porous character, a temperature of about 1,000 degrees C. is most suitable.

The sphere of my invention for which I claim the right of patent is stated as follows:

Sphere of Invention

(1) The method of making non-fingery coke out of a bituminous coal, without using natural coals of low volatile matter; according to which a certain coal is heated at a temperature between about 300 degrees C. and about 600 degrees C., so as to leave from 15 to 25 per cent of volatile matter in the coal; this coal is mixed with the unheated coal in the proportion of 20 to 35 per cent of the heated coal, and 80 to 65 per cent of the unheated coal, and the mixture is heated at a temperature between 1,000 degrees C. and 1,400 degrees C. (2) The method of making non-fingery coke out of bituminous coals without using natural coals low in volatile matter; according to which a coal or a mixture of coals is heated as described under (1), and this coal or the mixture of coals thus heated is mixed with the unheated coal or the mixture of unheated coals in the proportion given in the method (1), and heated in the same way.

(3) The method of making non-fingery coke by using coals which had been heated at a suitable temperature to supply the deficiency of the natural coals of low volatile matter; according to which, when the natural coal of low volatile matter is insufficient, that is, when, say, 20 to 35 per cent is wanting, the balance required is supplied by coal or coals whose volatile matter had been artificially expelled, as described in (1) and (2).

Method Used at Osaka Plant

The Japanese Government, after thorough investigation of the patented process, and of the actual working of the plant at Osaka, in view of the paramount importance of the process, has recently granted another term of protection from 1923 to 1930. Fifteen years ago the fuel question had not assumed the importance it has taken today. Connected with the recovery of low-temperature carbonization oils the method of utilizing the residue for such a purpose as the manufacture of metallurgical coke is considered by some to be entitled to sympathetic encouragement.

Certain characters of the semi-coal are essential for the successful attainment of the object, among which the amount of volatile matter left is one of great importance. When the semi-coal contains less than 15 per cent volatile matter, the coke produced will be found to be inferior in quality. When common coke breeze is used, although the fingery condition disappears, the mass obtained is not compact, the particles being loosely cemented together. Another esential qualification is that the particles of semi-coal must have very nearly the same amount of volatile matter. Hence for the practical working on a large scale, the difficulties encountered were found to be somewhat serious. In carrying out the process, an apparatus was designed, bearing in mind the following points:

(1) Brisk agitation is necessary to prevent the coal from caking in large pieces.

(2) The apparatus is to be provided with the fewest projections or appendages possible, consistent with its proper working, in order to prevent semi-coal from hanging on and accumulating.

(3) For evident economic purposes, the operations of feeding and of discharging must be continuous, for which object the agitating and conveying must go together.

(4) Easy access to all the parts of the inside of the retort throughout its entire length without stopping the working is necessary for inspecting and cleaning when needed.

(5) The possibility of easy regulation to suit different kinds of coal. The apparatus, designed so as to meet all the above requirements, was found to work quite smoothly, and the writer is satisfied with the successful practical working on a large scale.

It is quite surprising what a great difference it makes when this semi-coal is used for mixing. It was found that as the quantity of volatile matter decreases below 15 per cent., the compactness of coke decreases, though the cleavages are absent.

Service and Good-Will Advertising

GOOD SERVICE MAKES FOR GOOD-WILL—PROMISES MUST BE KEPT—COMMON SENSE IN ADVERTISING COPY

R. F. McGuinness, Utica Gas & Electric Co.

Good-will is engendered, developed and promoted by good service. A satisfied customer is always a good friend. Advertising can build up good-will by pointing out the good service that is rendered by the company. But it is of paramount importance that the promises made and advertised should be scrupulously fulfilled. Common sense should be used in preparing advertising copy, which should be couched in simple terms, understandable by all.

These important features of service and good-will advertising are brought out in clear tones in the following article which was delivered before the annual meeting of the Commercial Section of the Empire State Gas & Electric Association, June 28 and 29, 1923.

"Service" and "Good-Will" Advertising

One of the interesting developments of recent times in our field of activity has been the rapidly changing attitude of the general public towards utility companies. It matters not how the public came to acquire the false notion that most such corporations were conducted on "the public be damned" policy. The fact remains that for a long period of years this idea, fostered and developed by ambitious space writers in newspapers and magazines, almost invariably in complete ignorance of actual facts, was held as a doctrine or creed by an immense number of the people the country over.

To combat this erroneous idea there was, of course, but one thing to be done. It was of course natural that the sensible, deep-thinking, far-sighted men of the profession should start to fight fire with fire, and the result has been practically a complete rehabilitation of the public confidence in the utility corporation. Publicity and advertising founded on truth and fact, with sustained performance of every promise, cannot but produce the results desired. Gas and electric companies which have adopted this policy and which have consistently kept it before their public, have profited from it enormously. Some companies, that sensed the general idea but exploited it in a desultory fashion only, have had some beneficial returns, but not at all in the proportion that they would have benefited had they been more liberal in their energies and expenditures along this line.

Service and Good-Will, Lessons of the Past

Conceding the fact that publicity and advertising have proven a good thing for utilities like ours, what have we learned from our experience that will be of important concern in connection with future activities? To my mind, the answer is contained in the title of this paper—"Service" and "Good Will" advertising, continued and continued and continued. Much has been accomplished in acquainting the general public with the inside of our organizations, the vast details of efficient administration that have made possible the complete use and enjoyment of the wonderful force which adds so greatly to the sum total of human happiness.

The personnel of the organizations has been exploited, the public has come to know that the workers who bring to the home and factory this great boon, are human beings like themselves. Methods of financing, methods of production, distribution and maintenance, the vast perplexities which are met and overcome each day, the constant efforts of every employee and official to maintain service in behalf of the patron—these and many more interesting phases of our work have been intelligently advertised and placed before the general public with good results. But the real thing that our public is interested in is "Service." Good service produces "Good-Will," and there are literally scores of individual units that must be gathered and carefully twisted together to make the whole which satisfies the public, secure its good-will, and, most important of all, maintains that good will uniformly and continuously.

Fitting Performance to Promise Essential

We who have had experience in the field of publicity and advertising for our concerns know now what publicity and advertising will accomplish, and we know, or ought to know, why they do it. Fitting performance to promise is, in my opinion, the one thing that will accomplish our purpose.

And in this connection, it should not be overlooked that in whatever method we embark upon for securing the good-will of the public through advertising, there must be complete and consistent cooperation on the part of every department and bureau and every individual connected with our organizations. It is not enough, for instance, for the publicity bureau of the commercial department to be well organized and efficiently administered. They may produce the most ornate and attractive advertising, their copy may have the "punch" of a Dempsey, but if they promise what the other units of the organization cannot bring to fruition, their labor is in vain.

Such advertising, therefore, must be based upon complete knowledge of all the intricate workings of a whole organization. And, conversely, the efforts of the publicity and advertising branch must be thoroughly understood by all the various units of the production, distribution and maintenance branches. The written word of your copy-man, the hand-

some illustrations of your artists, the general attractiveness of your display advertisements are intended to develop the reader into a patron, either a new user or a more liberal user of gas if already upon your list, but it is the official or employee with whom he finally holds personal contact that has the task of getting the signature on the dotted line.

Promises Must Be Kept

If that potential customer finds that the promises you have held out to him through your advertising are impossible of fulfillment; or, what is worse still, if he enters into some kind of a contract and is given assurance that he will be taken care of in a certain and definite way, and then finds a break between promise and fulfillment, you are likely to suffer a double loss, the loss of the potential patron and the loss of the prospective good-will you are endeavoring to negotiate through your advertising.

So, it is important to have perfect connecting links between your promise and performance. If you are advertising, for instance, prompt service in connecting up new customers, setting meters for transfers, maintenance of appliances; or if you are exploiting special service for complaints—gas leakage, burners out of adjustment, etc.—be sure that all your agencies are equipped to back up your promises. You are thus not only making good your promise, you are giving the customer exactly what he is paying for and what he is entitled to. In addition, you are adding to your stock of the best paying adjunct of any business—"Good-Will."

Advertising Should Be to the Point

And in this advertising there are certain features which are, or should be, axiomatic. On this subject, in his "Sid" talks, Bruce Barton says "Be genuine, be simple, be brief." The whole subject cannot be better summed up than in those six words. Talk to the people in terms which they understand. Avoid technical terms where plain English will deliver the message. And never be apologetic.

Hypocrisy, apologies, or even explanations, in advertising are never necessary. If two more words were to be added to Bruce Barton's advice, I would suggest these—"Be persistent." Most of all, I believe, these two words are necessary in our business. Our service has been so everlastingly convenient and so transcendently important that there is a tendency on the part of many people to take it as a matter of course and thus fail to appreciate it properly. About the only time, as a matter of fact, that they consider it at all is when the service is temporarily interrupted or suffers some sort of a breakdown.

Common Sense and Copy

In "Service" advertising beyond the general proposition of developing "Good-Will" through "Service," the underlying idea in preparation of copy should be "Common Sense." That is, proceeding directly to the point, showing the ordinary citizen in plain words, just what can be accomplished through the medium of our products. Convince him that there are many phases of human endeavor that can be better accomplished by the use of gas. That it will do things better, quicker, less laboriously, more cheaply. That its use will prolong life, promote comfort and happiness in the home, lift the burden and reduce the labor.

Educate the public in the fact that quantity production of gas, with a steady distribution to a diversity of industrial and commercial customers, means more economical production, in which, in due course of time, all will participate. Increased production in any line of business brings better service and lowered costs. Increased expenditures, therefore, for advertising purposes to bring these facts home to the public mind are perfectly justified. Another interesting and worth-while result accomplished is the better and fairer understanding by the public of the problems and developments within the industry, which tend to minimize complaints and eliminate costly litigation for which the taxpayers and customers ultimately have to pay.

Good Service Produces Good-Will

"Good Service" inevitably produces "Good-Will." "Good-Will" implies "Good Service." The two terms are impossible of separation. One must inevitably supplement the other. The advertising which is based fundamentally upon this proposition is invariably successful and when properly planned, properly correlated with all the other activities and efforts of the institution, properly backed up by every single agency engaged in by every individual connected with the institution, cannot but return big dividends to the company it exploits. But it cannot succeed wnen it is undertaken as a matter of course, simply because others are doing it. There must be enthusiasm, as well as intelligent direction behind it. It must be consistent and continuous, not indifferent and sporadic. It must be based on truth and honor. You have a product which is a necessity to all. Make all understand its necessity. You have a product which is worthy. Make everyone understand that you are prepared to distribute it in the best possible manner, for the comfort, benefit and material welfare of all the people.

If you do this, consistently and with sincerity of purpose, you will have reached your goal, accomplished what you set out to do—built up "Good-Will" through "Good Service" and established "Good Service" to maintain that "Good-Will."

BOOSTING GAS SALES

The Denver Gas and Electric Light Company are advertising:

"USE GAS FOR FUEL"

Extensive improvements made in our Gas plant have enabled us to furnish to our customers a steady, dependable gas service.

In the industrial and domestic fields, gas is coming into its own. For house heating it proved a decided success in a large number of Denver homes last winter—was yours one of them?

If not, you should lose no time in getting in touch with our house-heating department.

Gas Meter Capacity

HISTORICAL SKETCH OF METER DEVELOPMENT, CAPACITIES AND DIFFERENTIAL PRESSURES

W. A. Castor, Superintendent of Meters, The United Gas Improvement Co.

This paper, delivered before the first annual meeting of the Eastern States Conference, held in Philadelphia, April 12, 1923, is concerned with the historical development of gas meters from the standpoint of meter capacity and differential pressures. It outlines some of the important work performed along these lines.

What is the capacity limit of a meter and what causes that limit, was the question asked by an eminent gas engineer during the discussion of the Report of the Committee on Uniformity of Gas Meters at the meeting of the Ohio Gas Light Association nineteen years ago. This question was put several times in varied form but no satisfactory answer was forthcoming, notwithstanding lengthy discussion of the subject by engineers and meter manufacturers present.

Failure to answer the question was not due to lack of actual knowledge of the volumes of gas that could be passed through each size of meter, but to the fact, it would appear, that no one was prepared to answer comprehensively and, evidently, no one cared to venture an expression of opinion. The one exception was that of a prominent meter manufacturer who stated, in substance, that meters were capable of enduring the passage of gas at the rate of six cubic feet per hour times the nominal, or light size of the meter, and that they should not be required to register greater flows notwithstanding they were capable of passing considerably greater volumes in every case. This claim was immediately attacked as being antiquated, one speaker stating that he could imagine no better way to increase the life of a meter than as recommended by the manufacturer in question, unless it would be to leave it in the warehouse.

Early History of the Dry Meter

This discussion of long ago brought out the fact that during the sixty years that had elapsed since the introduction of the dry meter, very little effort had been made to develop meters of increased capacities without increasing their bulk. This applied more particularly to the larger sizes, the capacities of the three and five light meters having been increased gradually to meet competition of the various makers. The apathy of the manufacturers evidently was a reflection of the state of the gas business up to that time. Gas was used almost entirely for illumination and excessive pressures at the flat flame burners was to be avoided, consequently any marked loss in pressure of the gas during its passage through the meter was of small concern. This, in connection with the fact that the individual consumer's demands were small, as compared with the hourly demands for the average consumer of today, and that meters probably were over-size for the number of lights they supplied, afforded little incentive to the manufacturers to change their meter construction and operation so as to enable the purchaser to obtain greater hourly capacity, for a given bulk of meter, especially when the purchaser did not feel the need for same and did not request it.

Evidently meters were designed originally to work under a very small pressure loss, probably not exceeding three-tenths inches of water. This provided for a very large excess capacity as, for example, a five-light meter, required to pass only thirty cubic feet per hour, could, as a matter of fact, pass twice this volume without being overloaded, as we now view the situation. The question of differential pressure seems to have been of secondary importance, the big consideration being that of speed of operation of working parts obtainable without causing undue wear and strains. Only with the growing demand for greater hourly capacity, per meter bulk, resulting from the changing conditions of the gas business, calling for increased pressures and volumes to supply the mantle burners and atmospheric burners coming into more general use, was the question of pressure losses within the meters given serious consideration in the obtaining of increased capacities consistent with speed of operation.

It is questionable if the meter makers, of say twenty-five years ago, made routine tests to determine the capacities of the meters manufactured by them, assuming they were good for at least the number of cubic feet per hour determined in each case by multiplying the size of the meter expressed in lights by six. They were, however, quick to meet the conditions of the changing demands of the purchasers and, with the realization of the necessity of providing for materially increased speed of working parts and the enlarging of valves and gas ways, gave their full measure of support in the designing and manufacture of such meters.

At the outset, and for many years thereafter, the question of capacity, or rather of capacity determination, seems to have been a matter of individual opinion as to the allowable number of revolutions of the tangent and the effect of such revolutions upon wear of moving parts. Not until 1906 was any attempt made by a gas association to establish a standard for the determination of hourly meter capacities. In March of this year the Committee on Uniformity of Gas Meters of the Ohio Gas Light Association recommended as a standard differential pressure, at which to measure the capacities of meters, that of three-tenths of an inch water column pressure. Incidentally, this committee was the first to recommend a standard schedule of meter sizes to be manufactured, and to recommend the badging of meters to show the cubic feet of gas they were capable of passing per hour. This same committee

later in the year reported to the American Gas Institute recommending the same five sizes of meters based on capacity per hour as follows: 100, 150, 300, 500 and 750, to take the place of the then existing 5, 10, 30, 60 and 100 light meters respectively. The Ohio Gas Light Association adopted the report but the American Gas Institute passed it on to the 1907 meeting, where it failed to receive approval.

Meter Men Ready to Co-operate with Gas Men

In the discussion of this committee report, Mr. Paul Doty made the following remarks, which seem of more than passing interest in view of subsequent action on the subject of meter capacity determination: "The meter manufacturers want to know what the gas men want. If the gas men will say that they will require a three-tenths differential pressure, that is one thing settled. If they will say they want the measuring gas to be a specific gas or air, that will also be something of an advance, and then if they want to include the temperature, the altitude and the pressure conditions, that will be another step in advance. As gas men, we are willing to agree with Mr. Dickey on three-tenths differential pressure. It seemed fair to us. Formerly three-tenths inch differential pressure was a severe tax when we were carrying only one-inch pressure on our mains and getting only seven-tenths-inch at the burner. Pressures are now higher on the mains and we can afford to sacrifice three-tenths of an inch differential. Later on, somebody will come along and say that we can sacrifice five-tenths-inch, but we would not now agree to that. We would like to have the association go farther, if they will, and say what further conditions they are going to demand and then the meter manufacturers will make a meter accordingly."

Question of Differential Pressures

Gas engineers, as a whole, were not of the same opinion as Mr. Doty concerning differential pressures, as illustrated by the research work done by the United Gas Improvement Company in 1903 and 1904, culminating in the designing of five sizes of meters, having capacities determined under a five-tenths differential pressure, to replace thirteen sizes, up to 300 light inclusive, included in the meter schedule at that time. The meter companies soon afterward reconstructed their meters, the smaller sizes in particular, so as to increase their hourly capacities as determined under a five-tenths loss in pressure in the meters and not the three-tenths loss recommended by the committee of which Mr. Doty was a member.

No further official action was taken on the question of capacity determination until 1920,—the meter makers and gas companies drifting along, each according to his own ideas concerning the matter. Some used air, while others used gas as the medium for obtaining capacity results. Methods of operating the provers and of using stop watches were not uniform, and serious differences in practice resulted from the methods of employing two separate gauges to obtain the difference in gas pressure across the meter between the inlet and the outlet screws. These differences in practice enabled widely varying results to be obtained and personal equations to be magnified so that the need for a standard method of obtaining capacity ratings was most urgent, if not as clearly apparent as it should have been.

Work of 1922 A. G. A. Committee

The 1922 A. G. A. Committee on Consumers' Meters was the first gas association committee definitely to recommend a differential pressure of five-tenths of an inch for the purpose of determining the hourly capacity of gas meters. This committee, through the assistance of the Bureau of Standards gave to the meter manufacturers and to the gas industry, for the first time, a clear cut, comprehensive method for the determination of meter capacities.

The use of air was recommended by the committee for determining the capacities, the meters first to be adjusted to correct proof. The gas capacity, to be shown on a badge soldered to the front gallery plate of the meter, was to be one and one-quarter times the air capacity. The specific gravity of the gas was assumed to be .64 as this was considered to be about right for all practical purposes. For the purpose of obtaining the pressure drop across the meter a water gauge, having a single inclined tube, and connected close to the meter inlet and outlet was specified. Rules were incorporated in the report to enable a determination of the factor by which the air capacity should be multiplied for gases of higher or of lower specific gravity, if this refinement was deemed advisable, also to cover the correction for capacity increase for locations 2,000 feet, and over, above the elevations of the localities where the new meters are made and badged, all being in the eastern part of the United States at comparatively low elevations. The Committee also recommended the use of air at a pressure not exceeding ten, or less than two inches of water column, also that the temperature of the air, under ordinary working conditions, be maintained fairly constant during the test. The rated (gas) capacity to be shown on the badge in the nearest even ten cubic feet lower than the calculated test capacity.

This last recommendation of the Committee could well be modified still further to reduce the capacity shown on the badge by a certain percentage, the capacity thus obtained to be the nearest lower multiple of ten. The 1916 Committee on Consumers' Meters of the A. G. A. expressed their opinion that meters be badged to show hourly capacities and that the badged capacities not exceed 80 per cent of the capacity of the meter when new. This is not far from the actual conditions as affecting meters in service in Philadelphia, the capacity falling off rapidly, under a stated loss in pressure, as soon as the valves and working parts become gummed or dirty.

The 1922 committee report also gives in detail the procedure to be observed in conducting the capacity tests by means of a calibrated prover. These details are shown in the October, 1922, A. G. A. Monthly and in the Proceedings of the A. G. A. for 1922 and cover the work very thoroughly.

The adoption of the 1922 report by the A. G. A.

constituted the first real step toward a certain desired uniformity in gas meters. The manufacturer now has a definite basis from which to determine capacity and so badge his product, with the knowledge that each of his competitors is working along the same lines, and that each purchaser is in position to check up the capacities, as indicated by the maker's capacity badge, and to come back at each maker on exactly the same basis, if their findings do not agree.

Let it be known that progress is the order of the day in so far as the manufacture and development of gas meters is concerned, notwithstanding the fact that seventy-eight years elapsed since the introduction of the dry meter before a clear decision was reached by any representative committee of the gas industry as to what were the determining limits of meter capacity.

House Heating by Gas*

EXPERIENCE WITH HOUSE HEATING INSTALLATIONS IN UTICA

A. T. Fay, Utica Gas & Electric Co.

The heating of houses with gas is a subject of increasing public interest. Gas companies have to consider this business as a part of their regular winter load. The Utica Gas & Electric Co. made an extensive test of experimental installations and arrived at very interesting conclusions.

During the past year there has been such a remarkable increase of interest on the part of gas companies and the public in the subject of domestic heating from central boilers and furnaces and so many excellent articles on this subject have appeared in magazines that I feel that any general remarks on the subject would be only a review of facts with which you gentlemen are already familiar. I have therefore confined myself in this paper to a review of our experience in Utica with house heating with gas fired boilers.

It was decided in the summer of 1922 to make experiment installations in the residences of several employees of the company to secure data as to the practicability of gas house heating in our territory and for estimating gas consumption, hourly demand and operating costs for future customers and also to determine the most suitable boiler to use. The result was that one Ofeldt house heating boiler No. 5-D and one seven section Bryant boiler were ordered. Both of these were hot water boilers. Later the question of a new boiler for heating the office came up and two Bryant 19-section steam boilers were installed. All of these boilers were installed in connection with existing coal boilers. Later a request was made by a customer for an estimate on a gas fired boiler for heating his residence and an eleven section Bryant hot water boiler was installed. This made a total number of four installations, three of which were hot water and one steam.

Cost of Installation

The costs for each installation were as follows:

5-D Ofeldt boiler hot water 800 sq. ft. rating	$752.00
7-section Bryant hot water No. 1350	659.00
2-19 section Bryant steam	2,420.00
1-11 section Bryant hot water	814.90

For collecting data on operation separate gas meters, recording thermometers for inside and outside temperatures and water temperatures, gas pressure gauges and a steam pressure gauge on the steam boilers were installed.

All of these boilers were operated on automatic control, the three hot water boilers being controlled by a room thermostat and the steam boilers by a diaphragm valve operating on steam pressure, the rooms in the office building heated by the steam boilers being controlled individually by thermostatically operated valves on the radiators.

Of the four boilers installed, with the exception of the Ofeldt 5-D hot water boiler, all gave highly satisfactory heating conditions and a minimum of operating difficulties. The trouble with the Ofeldt boiler was due principally to the burner design which caused backfiring, burning out of screens and sooting up of sections.

Operating Results

The 7-section Bryant boiler was the only one in operation at the beginning of the heating season, September 27th, and as its operation was comparable to that of the other Bryant boilers the data on this operation is given as typical.

Operation Data

Average outside temperature for season .30.6 deg. F.
10-year average outside temperature ....35.6 deg. F.

As the temperature for the season was five degrees lower than the average, the gas consumption and other factors are reduced accordingly to get the figures for an average year. On this basis the average gas consumption for this installation is 387,000 cu. ft. for the heating season from October to April, inclusive.

A summary of the result of our observations is as follows:

Yearly gas consumption	387,000
Total days heating	217
Average daily consumption	1,782 cu. ft.
Gas consumption per cu. ft. heated	22 cu. ft.
Gas consumption per sq. ft. radiation—	
Hot water	708
Steam	1,130
Average outside temperature for season	35.61 F.
Average inside temperature for season	73.4 F.
Average temperature rise for season	37.79
Cu. ft. gas per degree rise in temp. per sq. ft. radiation per season—	

*Delivered before the Annual Meeting of the Commercial Section of the Empire State Gas and Electric Association, June 28 and 29, 1923.

Steam	30
Water	19
Cu. ft. gas per cu. ft. heated per degree rise in temperature per season	.58
Average deficiency in temperature for season	5 deg. F.
Amount gas equivalent to 1 ton hard coal	29,770

Conclusions

As a result of these experiments we have come to the following conclusions in regard to the gas house heating business in our territory.

1. The cost of gas heating will be about double that of coal heating considering fuel costs alone.
2. The maximum daily consumption will be about double the average for the season.
3. A certain amount of business can be secured at present rates, customers being willing to pay a premium for the perfect results from gas heating.
4. Gas companies should be prepared to take care of the house heating load if they really intend to give the complete service to their customers which they are continually claiming to give.

In selling gas heating we believe it best to point out to the customer the comparatively high cost as well as the many advantages of this ideal fuel. It is not necessary to be apologetic about the cost. The customer expects the cost to be high and will usually be willing to pay for quality in heating as in any other article.

It should be insisted on also that every installation be as perfect as is possible to make it. Especially in the introductory stage every job should be a success.

If sales are made in this way the business will be built on a sure foundation and disgruntled customers avoided.

In closing I wish to express the hope that this review of what we consider our very satisfactory experience with gas house heating may encourage other companies to take up this use of gas and so bring profit to themselves and comfort to their customers.

Industrial Engineering*

DISCUSSION OF FACTORY PHASE OF SUBJECT

Ralph C. Smith, Empire Gas & Electric Co.

We, as a combination gas and electric company, sell electricity for industrial power uses and gas for fuel and heating. Our future lies in the prospects for the use of gas where heat is required, and the prospects for the future are greater than those in the electric industry.

Our first aim must be to give good service, not only in the quality of our product, but we must gain the confidence of the manufacturers, study his requirements in the effort to anticipate and interpret his desires. What may be acceptable as service to one may not be appreciated by another. It is, therefore, necessary that we study our customers with great care and endeavor to ascertain in what ways we can be of greatest use to them, and having found those ways, to utilize them.

The mistakes we have made in the past in gas fuel engineering work has been the installation of inefficient apparatus which nine times out of ten has been replaced by oil or other cheaper fuel, which makes the task of selling gas fuel to the same customer doubly hard.

Manufacturers Must Be Convinced

Therefore, we must extend every effort to convince the manufacturer and prove it to him that gas can be used economically and to better advantage than coal, coke or oil, in almost every operation where heat is required, except possibly for heating the factory buildings.

We are making a survey of the possibilities for gas in our territory with the idea of making trial installations where necessary, and convincing the manufacturer that we can give him good service, possibly increase his output, lower his cost, and make him a satisfied customer, at the same time increasing our output of gas.

One item in our favor at the present time is the high cost of coal and coke, which from present indications will not be lowered again, and the probable increase in cost of fuel oil. Also, by increasing the output of gas, we can undoubtedly make a reduction in the price to the customer. This will come about because the plant can turn out about 50 per cent more gas with practically no increase for cost of labor.

Increased Efficiency Required

Not only are our efforts being directed to new business, but we are continually working out more efficient methods, on present installations. Much time must be spent making tests from time to time on fuel burners to ascertain if the customer is getting fuel value for his money. We cannot forget them as soon as we sell them a new piece of apparatus, as it is not always skilled labor that handles these devices.

At present about twenty-seven per cent of our output of gas is taken by industrial plants, but this should be increased to at least forty per cent in another twelve months.

We have absolute confidence in our products and are willing to spend money to get new business knowing that ultimately we will get an increased output and a good profit on these investments.

*Delivered before the annual meeting of the Empire State Gas & Electric Association, June 28 and 29, 1923.

As The Journal Views It

GAS PROGRESS AND APPLIANCES

The gas industry and the appliance industry are closely connected. This connection and relationship is more intimate than may be supposed at first glance, but there is no doubt that the two industries are interdependent. In fact they are so closely allied that it is perhaps preferable to include them both under the common heading, gas industry, as construed in its more general meaning.

Therefore it is self-evident that the progress of one connotes the progress of the other and unless one develops at the same rate as the other, the entire industry is apt to suffer retardation in its development. It may be likened to a team of horses pulling a heavy load. Both must work in unison or else the load does not move forward as it should.

Therefore, the recent announcement of the formation of the Industrial Section of the American Gas Association is just as important to the gas appliance industry as it is to the gas industry proper. Industrial gas is just as pregnant with possibilities for one as for the other. The future of the gas industry is the future of the gas appliance industry and in order to attain the common goal, the universal extension of gas as a fuel, both in industry and in the home, in order to make the position of the gas industry in the business world what it should be and what it must be, it is necessary for the gas appliance industry to develop and progress along with the gas industry. There must be no lagging behind, there must be no delay. The two must advance together so that every possible opportunity of furthering the interests of gas can be taken advantage of.

To be sure, the gas appliance industry has been progressive in the past. Various enterprises interested in developing and manufacturing gas appliances have given considerable time and attention to the improvement of gas devices of all sorts. In some cases the experimentation has been on a very large scale. No expense has been too large. Work has been done along altruistic principles for the common good of the entire industry. This is eminently laudable. It is to be encouraged by all means, for it is on such research and investigation that the progress of any industry depends.

Now the future looms bright. Gas is entering a stage of its history which will very likely be of crucial importance in its life. Gas must develop and must make the best of every opportunity that is thrown in its path and, moreover, it must voluntarily create its own opportunities so that the greatest progress can be made. In order to do this, the co-operation of the gas appliance industry is required. It is still necessary for additional research and investigation to be made to determine the fitness of gas as a fuel for new purposes, in new manufacturing processes, wherein it has not yet been introduced. The gas industry as a whole cannot develop as rapidly or as effectively as it might, if one of its member industries does not develop as well. Industrial gas spells great things in the future for gas appliances. As industrial gas is used in increasingly larger amounts throughout the industries of the country, the appliance business will develop and assume increasingly larger proportions.

The future of both is the same. Both must progress together, for gas appliance enterprises must realize that they must form a part of that development; that they must do their share in furthering the progress of the entire industry. A chain is just as strong as its weakest link. The future is bright, the prospects are good, and if every link, if every part of the gas industry does its share, and there is no question but that it will, the common goal will be attained.

GAS COMPANY SEEKS LOWER RATE

It is not often that a gas company has to protest against too high a rate, but such a contingency has arisen in Michigan. In that state the Monroe Gas Company has had to request a temporary injunction against the enforcement of an exorbitant gas rate which, it is claimed, would result in the consumers refusing to purchase the gas. This is a good example of the general spirit of fairness and responsibility that exists in the gas industry.

What Are the Benefits of Customer Ownership of Public Utilities?

BENEFITS TO COMMUNITY. PERMANENCY AND SAFETY OF INVESTMENT. ATTRACTIVENESS OF PUBLIC SERVICE SECURITIES

Esther E. Dennison

The following article, which is reprinted from "Tenney Service", won the second prize offered by Forbes Magazine for the best letters on What Are the Benefits of Customer Ownership to Public Utilities?

It is an admirably composed discussion of the advantages that would accrue to a community which was interested in its public utilities to the degree of customer ownership. It traces the early development of the utilities to their present position. It emphasizes the importance of the public utilities in the industrial and social life of the community and points out to the investing public the permanency and security, the profitableness of investing in public utility securities in contrast to speculation in wildcat stocks.

What is meant by "Public Utilities?" The dictionary gives the following definitions: "Public"—belonging to the people, open, generally known; and "Utility"—usefulness, real value. Then "Public Utility" must mean something that is of real value belonging to the people; something useful that is generally known.

But in the early days they were not known as "Public Utilities," and nobody thought of them in that light. They were commonly called "electric companies," "gas companies," "telephone companies," and "street railways"; and as for belonging to the people, and being generally known, what could be farther from the truth? Were they not financed for the most part by private capital? Were they not conducted with secrecy; and didn't the public regard them with suspicion on that account? However, this was not entirely the fault of the early utilities. They were forced to supply their own capital; the public refused to risk the community funds in what seemed a hazardous undertaking; in fact, the public seemed to wash its hands of the whole proposition, as if it thought it was none of its business whether the enterprise turned out successfully, or not. If it proved to be successful, well and good, but if not, the public would be glad that it had had nothing to do with it. The people never dreamed that this was anything that vitally concerned them; that if this venture failed, they would remain as they were to the end of their days; that there would be no progress and no development.

Public Utilities Early Interest Financial

Nor did the early utilities look upon their business as a "public utility." If they seemed to be concerned almost wholly with the financial end of the business, who can really blame them? They were risking their own money in a new enterprise, in which nobody but themselves seemed to be interested, and if they failed to grasp the ideals of true service and courtesy that came later on when the business was established, they should not be criticized too severely. Of course, there were unscrupulous men in these early utilities, just as there were in other kinds of business; but there must also have been in these same utilities men of foresight, men with the good, red, fighting blood of the pioneers in their veins, or they would have failed. The odds were against them, but, fighting every foot of the way, this courageous band of men kept their business alive until here and there among them appeared men of foresight, who had a vision of what should be the proper relations between the utilities and the public they served—men with the courage of their convictions—and with the help of these men, the utilities began to take the public into their confidence; to tell the people about their problems; and from that time on, slowly, but surely, these relations have become less and less strained, and more and more harmonious.

Early Utilities Blazed Way

We owe a great deal to these early utilities, even though they were conducted in a manner that would not be tolerated today, for they blazed the way for our present-day utilities. Who knows but that, if this band of courageous men had not seen the necessity for service of this kind some forty or more years ago, this discovery would have been delayed for years; and we would now see our utilities in the days of their adversity, rather than as they are today, prosperous and growing by leaps and bounds. And as they are prospering, the nation is prospering. There could be no national life without them. This would be a country of small towns, villages and hamlets scattered over the land if it were not for our utilities.

Is it not true that our country has seen its greatest development in the past thirty or forty years? Is it not now the greatest country on earth? And what has made it so great? Was it great when Christopher Columbus discovered it? Or when the Pilgrims landed here in 1620? It is great because we have more and better utilities than all of the rest of the world combined. Without these utilities civilization would perish and no country is great unless its inhabitants are civilized.

While this development in our country has been going on, the public utilities have been so quietly and efficiently working to supply the necessary service that few people have realized how essential they have been to that development.

Public Utilities Integral Part of Industrial Life

Their service is so closely interwoven with our industrial and social life that we cannot think of one

without the other; it is as natural as the breath in our body, and we take it for granted, and never think of it unless something happens to interrupt that perfect service.

The public is beginning to realize that the utilities do belong to it; that they are public servants, and that the public cannot expect to receive efficient and adequate service unless it co-operates with these servants in every possible way; that if it puts obstacles in their way, and denies them a living wage, it is really hurting itself; and who wants to hurt himself or his business if he knows it? But there is much room for improvement in the public's attitude toward the utilities. The corner has really just been turned, and if the utilities are to continue to prosper and grow; if they are to see widespread "customer ownership" of their securities, it is of the utmost importance that they tell their story in all its interesting phases again and again; to keep it before the public mind, for the public, although fair when it knows the facts, is more or less fickle, and what might arouse it to a pitch of enthusiasm one moment, would be forgotten the next if it were not repeatedly brought to its attention.

Importance of Customer Ownership

It is highly important that there should be widespread customer ownership of public utilities. At the present time the greatest problem that the utilities have to face is that of securing sufficient capital to make the necessary extensions to take care of the constant demand for more and more service. A great many people do not realize that the utilities have to go out and borrow money for plant expansion and additional equipment; that they cannot take it out of their business as can other business enterprises; that they need vast sums of money for this purpose, and that they will continue to need greater and greater sums of money as new uses are found for their service, as the population of the country increases, and as business develops. A public utility cannot stand still; it must grow, or it will deteriorate; and behind this growth are the geniuses of the past and of the present working for the public night and day.

But what are the benefits of "customer ownership" of public utilities? Who are the customers of these utilities, and why should they take the savings of a lifetime and invest them in the utility business, rather than in some other business? The customers of public utilities are those people who use and pay for the service rendered by these utilities; and when you stop to think, is there anybody who does not use and pay for one kind of service or another? Except, of course, those unfortunate people who live in places remote from what we think of as civilization, many of whom would be glad to use and pay for this service if they could get it. If this service is something that we all use and pay for, isn't it also something that we cannot get along without? Isn't it something in which everybody should be deeply interested? For we all want to get the best we can for our money. Then, why shouldn't the customers of a utility invest in its securities if they are going to be directly or indirectly benefited thereby? Let me enumerate a few of the benefits of this form of investment.

Public utilities are under the most intelligent and efficient management. They are continually looking for ways to improve their service, and are ever watching for chances to effect such economy in the operation of the plants as will be consistent with the highest kind of service. As a purchaser of the product of a public utility, the customer is in a good position to know something of the management, and whether it is efficient, or not.

Permanency of Investment

The investment of a public utility is fixed and permanent. They cannot easily move their equipment from place to place, nor could they afford to do so if they wished; so if a person invests his money in their securities, he does not have to worry about whether they will be here today and gone tomorrow, as has been the case with some other industries in the past.

The banks and insurance companies of the country have invested millions of dollars in public utility securities; and I am sure you will agree with me that if these institutions with their years and years of experience, did not have perfect confidence in the stability and attractiveness of this form of investment, they would not use in this way the money that has been entrusted to their keeping; for it is a fact that any depositor who has $100 in the savings bank has an investment of $63 in a public utility. If it is such a good investment for the bank or the insurance company, is it not just as good an investment for the individual; and wouldn't it be more profitable for him to invest his own money directly in public utility securities and receive the full dividend, rather than just that part which he receives in the form of interest on his money deposited in these institutions? Of course, I do not mean that he should not deposit any of his savings in the bank, but I do mean that he should invest at least a part of those savings in the utilities that are serving him, and supplying him with the things that make life worth living.

He should invest in the securities of his own public utilities for, if he does not, then somebody outside his city or town will do so, and thereby gain control of this service that is so vital to him and his community. And the dividends which these out-of-town investors receive will be spent elsewhere, instead of being kept in the town where they belong, and where they would be used to provide for improvements to the city or town itself, for educational purposes, or for the necessities of life. Or, perhaps, these dividends would be deposited in the local savings bank where they would be left to accumulate until there was enough to purchase another share of stock, or another public utility bond.

If the dividends were spent in the local stores, a demand would be created for those articles thus purchased, and in order to supply this demand more articles would have to be manufactured, more people would be given employment, more raw material would have to be secured, and so on down the line.

Thus business conditions would improve, and many people would be benefited thereby.

Future of Utilities

If these utilities have attained their present marvelous growth in the short period of forty or fifty years, part of which time was spent in fighting for a chance to live, and in gaining a foothold, what can be expected of them in the next forty years? Is it not reasonable to expect that their growth and development will be even greater than it has been in the past; and that if they receive proper encouragement and co-operation, this growth should continue without interruption for many years, perhaps decades? They are now supplying the cities and towns, but what about the millions of homes in the open country that are waiting for this service? Shall we help to bring this service to them? What about the farming industry; the greatest industry in the world? Only a small percentage of the farming districts are receiving this service that we take as a matter of course.

Millions of dollars will be needed to supply service to these outlying districts and to the farming districts. Where will it come from but out of the savings of thousands of thrifty workers in this country?

Why Invest in Wildcat Stocks?

Shall we continue to risk our hard earned money in "wildcat" stocks, in something afar off that we cannot see? Or are we going to invest our savings in something that we can watch, something that is working for us night and day, year in and year out, Sundays and holidays included? When we invest in our own utilities we have only to turn a switch, press a button, light a match and apply it to a burner, lift a receiver off a hook, or hail a street car, to know that our investment is safe, that our money is working for us. Is there another form of investment that can afford this sense of security?

These companies are regulated, they cannot charge exorbitant rates if they would; and I doubt if they want to do so, except in isolated cases, because they have a reputation to maintain; they want the public to think well of them; so they would not be likely to do anything that would hurt their reputation, or antagonize the public, which is composed in part of their own friends and employees.

Public Utilities Large Tax Payers

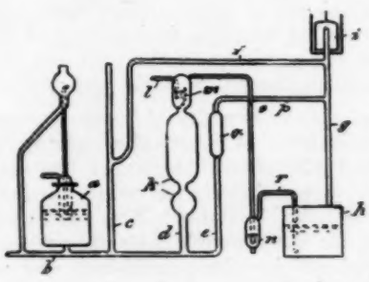
The public utilities are among the largest tax payers in a city or town. Also, the greater part of every dollar which they receive is paid out for labor, salaries and material, and is distributed in the community where the utility is located. So you see it pays a community to have its utilities prosperous, for the more prosperous they are, the more money the community receives.

There never was a time an individual with surplus money, whether the amount be large or small, had a more enviable opportunity to invest that money in stable and attractive securities, than at present. Securities that would yield immediate and high rates of return and lay the foundation for a steady future income. People who fail to take advantage of this wonderful opportunity to invest in the securities of their utilities will live to regret their negligence or lack of faith. Their's will be like those cases where people were afraid to invest in the stock of those early companies that were formed to develop some of the inventions and discoveries that have revolutionized the business world; which stock is now worth many, many times its former cost, and whose owners are classed among our richest men of today. In closing let me quote from one of our foremost investment institutions of today:

"We have come to regard public utility securities taken as a whole as the most desirable and attractive class in the investment market today. More favorably and intelligently regulated than the steam railroads; fundamentally more stable in every respect than the average industrial enterprise; the public utilities of the country face an assured future confronted by one great problem—to finance expansion of their facilities rapidly enough to take care of the steadily increasing volume of business offered to them. As we have pointed out before, the stability of the utility business is due entirely to its essential character."

AUUTOMATIC GAS ANALYSIS APPARATUS

The arrangement which is seen in the figure has been patented in Swedish patent number 51,142. Its purpose is the automatic analysis of gas. The arrangement consists of a graduated vessel and absorption flask and a second graduated vessel. A tube is directly connected with the absorption flask or with a second graduated vessel and is provided with a



graduated part. In this part the exact quantity of gas is measured for each analysis and then is introduced to the absorption flask. In the case where a neutral gas is used the latter procedure is followed. The gas sample may also be introduced to the second graduated vessel at the same time that the gas comes out of the first graduated vessel with the purpose of obtaining the increased pressure necessary for making the analysis and without subjecting the volume of gas to any variation or disturbing in any way the levels.

A Real Public Servant

HOW BRIDGETON, N. J., IS SERVED WITH GAS

Bridgeton, N. J., has the good fortune to possess a gas company, The Bridgeton Gas & Light Co., which is progressive, up-to-date, wide-awake and surely appreciative of the task that it has to perform in serving that city with gas. The gas works is managed by the Superintendent, Jacob B. Jones, who is of the best type of gas man, a man who realizes the responsibilities that are laid upon him in maintaining the gas plant in the highest state of efficiency and development so that it can and does take an essential part in stimulating and effecting the growth of the city.

Mr. Jones recently delivered two addresses, one before the Rotary Club and another before the Kiwanis Club, both in the same day. The esteem with which Mr. Jones is held in his city and the high position which is accorded the gas company in the community were attested by the fact that two newspapers in the city, the Bridgeton Evening News and The Daily Pioneer, devoted considerable space in reporting these addresses. This is a fine example of newspaper publicity and shows that the gas company can and will secure recognition if it sets out to work for it in earnest.

Service a Two-Sided Affair

In his first address before the Rotary Club, Mr. Jones made a few pertinent remarks regarding the real nature of public service. He said:

"Service is a two-sided affair. It means giving and receiving. There is an obligation on both sides. The very great majority of persons appreciate Service. It is only the very small minority, probably not more than one person in a hundred, who demands something in the name of Service that is selfish and unreasonable."

Gas Used for Many Purposes in City

He called attention to the fact that gas is used for many purposes in the city. He said:

"Since we have record of nearly 200 different uses to which gas service is now being applied in the city of Bridgeton, it would seem that their point is well taken. Aside from the very general use of gas for heating, cooking and lighting, we find, among the 200 different applications, that gas is used for heating the Linotype metal in the newspaper offices; the American Can Company uses great volume of gas in the manufacture of tin cans; the Ferracute Machine Company for the delicate tempering of dies; the Martin Dyeing and Finishing Company for the singeing of cloth; gas is used for the roasting of peanuts, the ripening of bananas, the making of false teeth, and City Hall uses it as a humane way of disposing of stray dogs."

Address Before Kiwanis Club

In the second address before the Kiwanis Club he emphasized the position the Gas Co. occupies in Bridgeton, being the oldest industry in the city. He outlined the history of the gas company and its development from earliest days to the present time. He stated in conclusion:

"This organization is composed almost entirely of Bridgeton men—the most of whom own their own homes. They are a part of Bridgeton, and they

Jacob B. Jones

are working earnestly to give Bridgeton the best gas service of any city in the United States."

Editorial in Bridgeton Evening News

The following editorial appeared in the Bridgeton Evening News on the day that Mr. Jones' addresses were published. It shows clearly the high regard of the people of Bridgeton for their gas company.

"During the recent 'Commission' government fiasco a number of wild claims and statements were made. Fortunately the public very plainly showed that it did not put any credence in these exaggerations and misstatements. In fact the campaign, conducted as it was, proved a decided boomerang.

"Probably one of the most absurd of the various attacks was the one launched against the Bridgeton Gas-light Company, particularly as the blows were aimed at the service rendered by that concern. The demand for cheaper gas when Bridgeton's rate is $1.70 as against $2.00 and $2.10 in

Millville and Vineland, of course fell of its own weight.

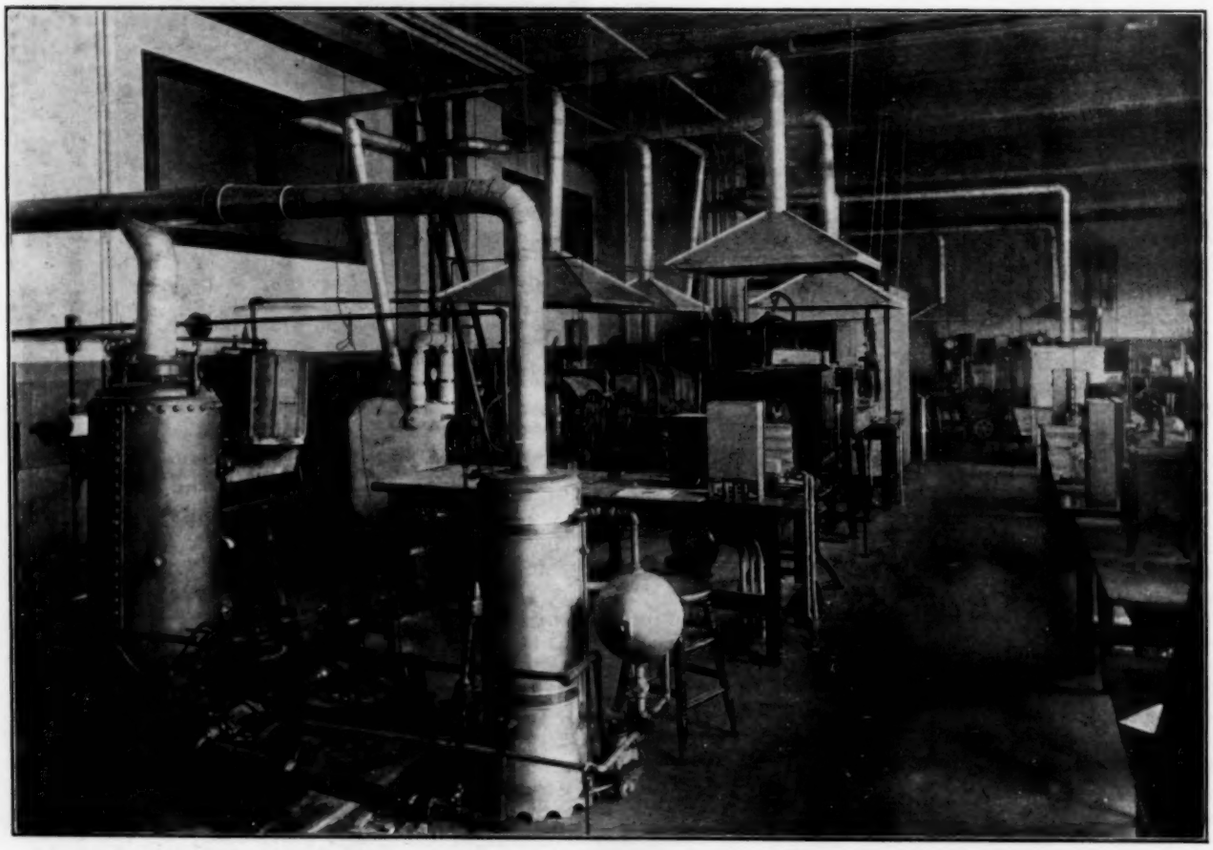
"But the attack on the service of Bridgeton's gas company was really cruel when every one of the 3,683 gas users in this city know full well that there isn't an organization of any kind in Bridgeton, or in any other city, from whom more courteous, immediate and capable service is forthcoming all hours of the day. Did you ever call the gas company and fail to receive service, regardless of weather?

"We hold no brief for the gas company, we own no stock nor are we indebted to it for anything. But we do have a desire to see credit given where it is due and to point out a rendering of real service which may well be emulated by any concern or individual in the city.

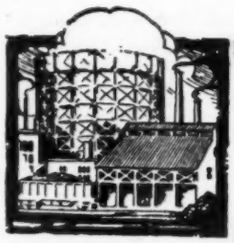
"A prominent Bridgetonian recently said, 'The people of Bridgeton do not appreciate Jake Jones.' And he spoke the truth. The manager of the local utility is very largely responsible for the character of service rendered by the 55 men in the employ of that company. The liberal policy of main extension has had much to do with the growth of Bridgeton's outskirts as well as the central sections of the city. When road building has been in progress, the company has hastened to renew its lines, run laterals even where homes are not yet connected and in every way has kept ahead of Bridgeton's growth, not behind it.

"Outsiders appreciate this situation. Only recently a prominent Philadelphian, a utility man of wide experience, said that nowhere to the best of his knowledge was there a better managed and better policied gas company in the country. And it has not been many months since this newspaper carried an article to the effect that the present manager had turned down a very large salary offer which would have taken him to the middle west. He preferred to remain in Bridgeton.

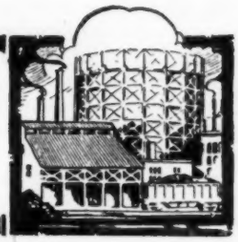
"Why then, knowing beyond a shadow of a doubt that the Bridgeton Gas-light Company is far, far above the average utility in the calibre of its service to a community, do men stoop so unfairly to attack a concern which in reality should be held up as a model to emulate rather than be used as a target for brickbats? It is one of those curious frames of mind some men occasionally assume when they hope to appeal to the unthinking reader. And yet such men ask the voters to express confidence in them at the polls and turn over the affairs of the city to their safe-keeping."



Gas Appliance Laboratory of Mass. Institute of Technology used by the recent classes in industrial salesmanship conducted by a Committee of the New England Association of Gas Engineers.



NEWS OF THE GAS INDUSTRY



Large Public Utility Merger

Chester, Pa.—The signature of Governor Pinchot on letters patent granted to the Philadelphia Suburban Company completes one of the most important public utility mergers of recent years in the State. It effects the consolidation of the following companies:

Philadelphia Suburban Gas & Electric Company, East Pennsylvania Gas & Electric Company, Bucks County Electric Company, Towamencin Electric Company, Plumstead Township Bucks County Electric Co., Dublin Borough Bucks Electric Company.

Bedminster Township Bucks Electric Company into the new consolidated organization to be known as the Philadelphia Suburban Co. The control of the new organization will be vested in the American Gas Company of Philadelphia which for a number of years has controlled and operated the Philadelphia Suburban Gas & Electric Company, the largest unit in the present merger.

The new company represents the result of successive mergers of one hundred and nineteen smaller companies, the oldest of which began operation in Pottstown in March, 1856. The old Chester Gas Company began operation in May, 1856, and then successively, the Media Company in 1866, Coatesville 1868, Darby 1871, Phoenixville 1875, West Chester 1885 and Jenkintown 1890.

From these small units originally serving a few customers for gas lighting only, there has developed a company supplying gas and electric service to approximately 70,000 customers. The uses for both gas and electricity have become so numerous as to make them absolutely essential in any progressive community.

The property and assets of the East Pennsylvania Gas and Electric Company, and the Bucks County Electric Company were purchased by the American Gas Company during the early part of 1923. The fact that the territories occupied by these two companies immediately adjoined each other suggested the desirability of merging the properties in order to effect a greater flexibility and economy of operation. This practice is carried out very extensively throughout the country today and has the general approval of Public Service Commissions and other State and national agencies. The production of gas in large central manufacturing plants makes for lower production costs than could be obtained in a number of small plants scattered throughout the territory.

New Company's Status

The new company will supply gas only in some sections, electricity only in some and gas and electricity combined in over 150 boroughs and townships in Delaware, Chester, Montgomery and Bucks County which includes Chester with its population of 60,000 and extensive manufacturing interests, as well as the entire fast growing suburban section in Upper Delaware County. In Chester County, it includes Coatesville, West Chester, Phoenixville, Spring City, Malvern and the intermediate sections, while in Montgomery County the company rights extend to Pottstown, Royersford, Jenkintown, Ogontz, Ambler, Hatboro, North Wales and the intermediate territory. The Bucks County section which immediately adjoins the Montgomery County section, includes Bristol, Morrisville, Yardley, Doylestown and New Hope. Thus it will be seen that the eastern boundary of this district extends from the Delaware State line on the south along the river (excluding Philadelphia City) to Bristol, Morrisville (opposite Trenton), Yardley, New Hope and beyond to a point approximately twelve miles below Bethlehem and Allentown. This territory includes a greatly diversified line of industry as well as one of the most highly developed residential sections in the entire country.

The company supplies gas and electric service to over 70,000 customers, to do which requires an investment in properties of over $25,000,000. On the basis of present rate of growth, it is estimated that during the next ten years the total number of customers served will be in excess of 150,000, a future growth which emphasizes the strength of this new consolidated organization.

The company has an authorized capitalization, approved by the Public Service Commission, of 45,150 shares of "no par value" common stock, and 35,000 shares of "no par value" cumulative preferred stock. The entire common capital stock is owned by the American Gas Company. The cumulative preferred stock is entitled to dividends of $7 per share per year and dividends on the preferred stock must be paid in full to the stockholders before any dividends are paid to the holders of common stock.

The directors of the company have authorized a very extensive construction program for 1923 in order to take care of the greatly increased demand for gas and electric service throughout its territory.

Gas Making Capacity to Be Increased

The Daytona Public Service Company of Daytona, Florida, are increasing their gas making capacity by the installation of an 8'0" x 7'0" x 7'0" Hydraulic operated "Western" Carburetted Water Gas Set complete with brick operating floor, steam hoist, coke bucket and cart. Contract awarded the Western Gas Construction Company.

Gas and Fuel Section Meeting in September

The officers of the American Chemical Society are arranging to hold the third meeting of the Gas and Fuel section at the next convention of the Society, to be held in Milwaukee during the week of September 10. The program this fall will consist entirely of papers on gas and fuel chemistry and, judging from the interest manifested at previous meetings, a large attendance is to be expected.

The sectional programs have heretofore included a number of interesting papers on the constitution of coal, combustion, coke formation and coking technology, the composition and utilization of tars, etc.

The papers to be presented at the meeting are required, under the rules of the Society, to be presented by members of the Society and to be listed in the final program. In order that they may be so listed the title and an abstract of the paper, preferably about 100 words, must be in the hands of the Secretary of the Section not later than August 16.

The officers will be very glad to receive notice promptly from those who contemplate presenting such papers and will welcome also suggestions regarding other papers which should be obtained. The titles and abstracts of articles should be sent to J. D. Davis, Bureau of Mines, Pittsburgh, Pa.

Awards Contract for Compressor

The U. G. I. Contracting Company, of Philadelphia, has received contract from the Northern Indiana Gas & Electric Company for the installation of a Compressor Building at the Ft. Wayne, Indiana plant, and to install in the building a motor driven compressor, together with all gas connections necessary for the installation.

The compressor will have a capacity of approximately 160,000 cu. ft. per hour at 25 lb. pressure.

Gas Light Company Announces Rate Cut

Janesville, Wis.—The new gas light company of Janesville announced a voluntary rate reduction of 5 cents per thousand cubic feet effective at once. The cut makes the basis $1.70 per thousand. A 10 cent reduction was made in the spring of 1922.

Well Known Gas Engineer Promoted

Oliver H. Smith, who is well known as a gas engineer and particularly for his work in connection with gas purifying methods and apparatus, has been promoted to be assistant to the engineer of

Oliver H. Smith

manufacture, R. O. Carter, of the Consolidated Gas Co. of New York City. Mr. Smith was formerly Assistant Superintendent of the Ravenswood plant of the Consolidated Gas Co., and is also known as one of the founders of the Gas Purifying Materials Co. of Long Island City, N. Y.

Gas Costs by the Meal

Cost accounting in home cookery shows interesting figures on the proportion the expense of gas used in preparing food bears to the total expense of meals. Dr. Minna C. Denton, home economics expert of the United States Department of Agriculture, was asked how much gas it took to prepare a dinner for six people. She put the question to a practical test. The results were as follows, based on gas at $1 a thousand cubic feet, and food at current market prices:

Cost of Dinner for Six Persons:

Gas	3.3c
Swiss steak	60.0c
Escalloped potatoes	19.0c
Spinach	12.0c
Bread, Rolls	9.0c
Butter	9.0c
Rice pudding	20.0c
Coffee	3.7c
Cream	10.0c
Sugar	1.4c
	147.4c

Mains Ordered for Counties Gas Company

The Counties Gas & Electric Company has awarded contract to The U. G. I. Contracting Company, of Philadelphia, for furnishing and laying approximately 45,000 ft. of 8" welded steel main in the West Chester-Downingtown District.

In addition to the large amount of work already being done or on order by the Distribution Engineering Department of The U. G. I. Contracting Company, this contract will keep them well engaged throughout the summer.

Progress Made On Gas Holder

Geneva, N. Y.—Work on the new gas holder of the Empire Gas and Electric Company on Railroad Avenue is rapidly progressing. This huge pressure holder will have a capacity of 500,000 cubic feet, when completed, or five times the capacity of the present holder. It will be ready for use this fall, officials of the local concern state.

The base is being laid at the present time. The workmen are working nightly until 8 o'clock in order to speed the work of laying the foundation as rapidly as possible. The base is of solid concrete, 98 feet in diameter and one foot thick, and will cost when finished, approximately $10,000. This base will have sufficient strength to safely carry a weight of 90 tons to the square foot. The steel work contract has been let and will cost $58,000 exclusive of labor, which is largely being furnished locally.

The holder will have three lifts on rollers to control the pressure partially by the gas and partially by a pressure apparatus. This modern holder, officials of the company state, will insure all villages north and west of Geneva with a sufficient gas supply at all times and still have enough in reserve for emergencies. In constructing so large a holder, the company also anticipated future growth of the city in residences and factories, requiring gas.

In addition to the holder, sufficient property was also purchased for a site for a large warehouse, 160 by 80 feet. A railroad switch will be run to the warehouse and every means of making it modern installed. The work is being done by the Stacey Contracting firm of Pittsburgh.

Dividend Announcements

H. M. Byllesby and Company announces that the boards of directors of the following companies have declared the regular quarterly dividends on their respective shares:

Ottumwa Railway and Light Company, 1¾ per cent on the preferred stock, payable July 14 to stockholders of record June 30.

Western States Gas and Electric Company of Delaware, 1¾ per cent on the preferred stock, payable July 14 to stockholders of record June 30.

Western States Gas and Electric Company of California, 1¾ per cent on the preferred stock, payable July 14 to stockholders of record June 30.

$300,000 Gas Stock Taken

Meridan, Conn.—The $300,000 increase in the capital stock of the Meriden Gas Light Company was purchased by the present shareholders of the concern, and many requests had to be turned down because of oversubscription. The corporation has increased its capital stock from $700,000 to $1,000,000.

New Northern States Power Bonds Quickly Sold

A new issue of $3,000,000 Northern States Power Company First and Refunding Mortgage 6% Gold Bonds, due April 1, 1941, brought out by a group of bankers and investment houses including H. M. Byllesby and Company, Harris Trust and Savings Bank, the Guaranty Company and Bonbright and Company, was all sold within a short time. The bonds were offered at 99½ and interest, yielding over 6 per cent.

Northern States Power owns or controls, and operates electric light and power, gas, steam heat or other utility properties serving three hundred and eighty-six communities located in Minnesota, Wisconsin, Illinois, North Dakota, South Dakota and Iowa, with a total population at present estimated to exceed 1,123,000.

Minneapolis and St. Paul, the principal communities served, are well known as the financial, commercial and manufacturing centers of the Northwest. These cities, and other communities in which the Company operates, are located in a territory rich in natural resources and one of the most rapidly developing in the United States. Net earnings of the Company for the twelve months ended May 31, 1923, were equal to more than 2⅔ times the annual bond interest charges.

The business of the Company consists chiefly in the generation, transmission and distribution of electric light and power, over 87 per cent of its gross earnings and over 94 per cent of its net earnings having been derived from this source in the year ended December 31, 1922.

Tacoma Gas and Fuel Company Gold Notes Redeemed

Notice has been published by Tocoma Gas and Fuel Company, of the calling for redemption on September 15, at a price of 102 and interest, of the outstanding Convertible Ten-year Gold Notes of the Company, due July 1, 1930. Payment will be made on or after that date at the Bank of California, National Association, Tacoma, Wash., or at the offices of H. M. Byllesby and Company, 208 South La Salle Street, Chicago. Holders of the notes, at their option, may surrender them, with all unmatured coupons attached, at any time prior to the redemption date and receive payment at the redemption price.

Plan New Gas Mains in Erie

Erie, Pa.—To increase the supply of natural gas to consumers in the northern sections of the city during the cold weather months, the Pennsylvania Gas Company plans to install a new ten-inch low pressure gas main, according to a plan outlined by officials of that company to Street Director Eichhorn.

Frank Krum, manager of the Erie office of the gas company, and other officials from Titusville, conferred with the street director unfolding the plan whereby it is thought that relief can be afforded from the heretofore admittedly stringency of supply.

The company has approached the city with the plan for the purpose of obtaining council's permission for cutting pavements necessary for the construction of the proposed main.

The street director requested the company officials to furnish him with maps giving in detail the proposed location of the main. He announced that wherever possible he would advocate location of the main in the lawn spaces to eliminate the necessity of cutting pavements.

Construction of the main is to be started about August 1st and the service is to be in readiness by the inset of the cold weather this fall, according to the plan, and is estimated that the work will cost over $50,000.

In the Interests of Shale Oil

Members of a subcommittee of the congressional finance and appropriation committee met in Boulder, Colorado, during the week of July 16-22. Plans were discussed for the establishment of a federal oil shale laboratory in Boulder, to work in harmony with the state oil shale laboratory now located at Boulder. It is the opinion of the subcommittee that Colorado having the largest shale deposits should be assisted in every practical way to develop it, and what was agreed upon will be submitted to the full committee at the next meeting of congress.

Governor Sweet extended an invitation to all oil men of the state to be present and assist in the establishment of the laboratory, mapping out the "problems of the future" as near as possible.

Permit Issued for Gas Plant Addition

Manchester, N. H.—Permission to build a retort house and coke storage building on South Elm Street was granted by the superintendent of public buildings to the Manchester Gas Company.

Gas Company to Build Boiler-Room Addition

Wilmington, Del.—The Wilmington Gas Company will build an addition to its boiler-room at the gas plant at the foot of Madison Street, and make other improvements at the plant, involving an expenditure of $9,500. A permit was issued by Building Inspector Ellis P. Preston.

Four More Purifiers for Peoples Gas Light & Coke Co.

The Peoples Gas Light & Coke Co. of Chicago has placed contract with the Western Gas Construction Company for four additional purifiers 40 feet in diameter and 15 feet deep, complete with valves and connections. The Western "DF" Reversing Valves will also be furnished to direct the flow of gas within the boxes.

Manufacturing Capacity Increases

The Louisville Gas & Electric Company is rebuilding its plant and will increase its manufacturing capacity to the extent of four additional 12 foot Carburetted Water Gas Sets. The contract for furnishing and installing these sets has been awarded to the U. G. I. Contracting Company of Philadelphia.

Gas Rates Cut Five Cents per 1,000

Janesville, Wis.—Announcement of a voluntary reduction in gas rates in Janesville of five cents per 1,000 cubic feet, effective in bills going out August 1, was made by I. F. Wortendyke, manager of the New Gas Light Company. Mr. Wortendyke estimates the rate cut will reduce the company's revenues $5,000.

"When agreement was made with the city in the spring of 1922 regarding valuation of the New Gas Light Company's property," explained Mr. Wortendyke, "the price of gas was reduced 10 cents per 1,000 cubic feet and it was understood that further reductions would be made when the company's earnings permitted.

"In line with this understanding, the New Gas Light Company of Janesville is pleased that it is able at this time to make another reduction of five cents per 1,000 cubic feet."

The monthly rates that will be charged on bills to be issued about August 1, covering July sales, will be as follows:

First 2,000 cubic feet, $1.70 per 1,000.

Next 3,000 cubic feet, $1.60 per 1,000.

All in excess of 5,000, $1.45 per 1,000.

Ten cents per 1,000 cubic feet will be added to the above rates if bills are not paid within ten days after date of delivery. Minimum bill, 50 cents a month.

Further reductions probable.

Mr. Worthendyke went on to state:

"Although a reduction of five cents seems small for the individual bill, the total decrease per year in the company's revenues due to this reduction is about $5,000. If Janesville continues to grow and business increases as present conditions indicate, the company expects to be able to make further reductions."

Monroe Gas Co. Seeks Lower Rates

Monroe, Mich.—A temporary injunction restraining the Michigan public utilities commission from enforcing an alleged exorbitant gas rate on the Monroe Gas, Light & Heat Company, was issued by Judge Charles C. Simons in Federal Court.

In the temporary injunction, which was signed by Judge Simons, Judge Arthur J. Tuttle and Judge Arthur C. Denison, of Federal Court here, a temporary gas rate of $1.54 per 1,000 cubic feet of gas was allowed, pending the outcome of the petition for a permanent injunction.

The company claims that the rate fixed by the utilities commission is so high that consumers will not buy the gas.

Gas Company Under New Management

Athens, Ga.—The interests of the local gas company have been purchased by the Henry L. Doherty Company of New York, the owners and operators of the Athens Railway and Electric Co.

In line with the well known Doherty method of operation an extensive program of improvements is being planned for the Gas plant here which according to the local management will give Athens a gas service comparable to the best in the South.

A survey of all gas and electric customers is being made by the company's representatives at present with a view to checking up on the kind and condition of appliances in use. As soon as this survey is completed steps will immediately be taken to remedy any condition which at present is causing their customers to receive poor service.

Modern Gas Co. Serves Rock Hill

Rock Hill, S. C.—It is very seldom indeed that one finds a town the size of Rock Hill with a gas plant so complete and up-to-date as this town now has. Improvements in the last three years have given Rock Hill the very best facilities, and the number of consumers already has risen to 725.

Statistics show that gas is the cheapest method or source of heat, light and power. It is cleaner and cheaper than coal or wood for heating purposes, if properly used, and is splendid for lighting.

Housewives who have used gas cannot be persuaded to do without it. Coal, wood and oil stoves go to the discard as soon as a gas range is placed in the kitchen. Gas is the cleanest fuel for cooking and it heats instantly. There is no kindling to fool with and no clogged pipes.

The Rock Hill Gas Company was established in 1917 to take over a plant which had been started three years earlier. The new owners immediately began making improvements, and progress along this line has been especially rapid since 1920.

Gas is now available for practically every family in Rock Hill proper, and if the rate of gain recently established is maintained there will be few homes indeed in Rock Hill without gas by 1925. Those who are doing without now simply do not realize what they are missing, and when the facts are made plain to them they will fall in line with their neighbors.

O. G. Murfit is general manager of the Rock Hill Gas Company, which is a member of the American Gas Association, with general offices in Philadelphia, Pa. H. C. Cordero is local manager.

Mr. Cordero takes great interest in local affairs at Rock Hill and has been largely instrumental in effecting the great improvements recently made in the gas system here. Rock Hill now has gas facilities to accommodate many new industries and thousands of new inhabitants, and Mr. Cordero is active in all movements for the upbuilding of the city.